

peardrop “DBE Toolkit”

Formulation of a Deployment Plan for a Regional Digital Business Ecosystem

*Hints, clues, tips & tools in
helping regions deploy a Digital Business Ecosystem*

July 2008

The acronym **peardrop** stands for “**Promoting Ecosystems and Regional Development *in support of* Regional Operational Programming**”.

It is a Specific Support Action (SSA) under the strategic objective 2.5.8 ICT for Networked Businesses with a view to clarifying, disseminating and promoting the results of regional deployments of innovative ecosystem and SMEs cluster models.

Its principal focus is to make more accessible and more practicable for regional policy makers and key local actors the instruments for exploitation and adoption of new innovative business paradigms in ICT for Enterprise Networking.

For more information: www.peardrop.eu

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Introduction

In this chapter, we cover some introductory information on DBE and on how to make the best use of this document to prepare a DBE deployment plan. So...let's get started!

0.1 The Purpose of this Document and How to Use It

In the attached documents ([0.1.a Purpose.doc](#), [0.1.b Master_Diagram.ppt](#) and [0.1.c Logical_Framework.ppt](#)) you will find an explanation of this document and its structure.

In particular, the content of "[Purpose.doc](#)" can be used as an example for you to prepare a similar explanation to be included in your own plan.

0.2 What is a Digital Business Ecosystem (DBE)?

DBE definition

An important step to have the plan endorsed in the region is to clarify what a Digital Business Ecosystem is. An example of a possible definition of a Digital Business Ecosystem is provided in the "[0.2.a DBE_Def.doc](#)" file.

Hypothetical case study of a regional DBE

In order to help clarify the concepts of DBE, [peardrop](#) provides two examples ([0.2.b DBE_Case1.doc](#) and [0.2.c DBE_Case2.ppt](#)), you can also refer to the experiences of the existing DBE pilots - where DBE has been used in sectors like: tourism, IT services, agriculture, spatial analysis as well as for the promotion of culture, education and citizenship (details in the [Case Studies of Technology Transfer and Digital Ecosystem Adoption](#) from the [DBE Book](#) and [peardrop Case Studies](#)).

CHAPTER 1

Regional Development and Regional DBE Deployment

In this chapter, we cover the regional issues concerning DBE implementation. For some background reading and information please refer to the [Initial Report on state of the art on Economic Impacts on Regional Development](#).

1.1 The Region's current economic situation – an economic analysis

Macro-Economic Analysis of the regional economy and the potential opportunities from deploying DBE

When a DBE implementation is planned, some of the factors to be considered refer to the economic framework as well as the regional attitude towards ICT. The attached document ([1.1.a Macro_Analisy.doc](#)) collects some of these factors to help regions understand their current condition and attitude towards DBE. In general, the key issue here is to form a general understanding of the issues rather than to engage in detailed quantitative or statistical analysis: this means regions should reflect on the regional framework and use the statistical indicators as a support for their analysis.

Generally speaking, the information needed should be already available in Regional Operative Programmes but it could also be collected through a consultation with decision-makers involved in the regional economic planning, or with experts attached to a regional socio-economical body.

Use of SWOT Analysis

The attached slides ([1.1.b DBE_swot.ppt](#)) can guide you in conducting a regional DBE SWOT analysis to gain a better understanding of the DBE implementation potential of your region. The proposed tool, guiding you from a general SWOT analysis to a DBE deployment analysis, can be modified to include the elements of relevance to your local development strategies.

1.2 DBE role in supporting regional policies

DBE is a tool that can be used to address specific regional issues. The following tools can be used:

- "[1.2.a Issues.doc](#)" – this provides some ideas of how DBE can be used, in a regional strategy, in order to improve the economic performance of a region;
- "[1.2.b Reg_Benefits.ppt](#)" – this presents the main benefit of the DBE implementation and guides you in understanding how DBE can support your regional strategies;
- "[1.2.c Memo.doc](#)" – this sketches the main issues and the main reasons behind a regional DBE implementation. It moves from the general mainframe of DBE: SMEs and Lisbon Strategy. It has been prepared for general purpose but it can be useful to support the engagement and communication with political leaders.

1.3 Choice of Sector(s) for DBE deployment

The attached document ([1.3.a Sector_Possibilities.ppt](#)) provides guidance on the range of potential sectors that could be targeted for a DBE implementation: **peardrop** identifies some sector "prerequisites" from a DBE perspective and outlines an approach for selecting the DBE sector(s).

Alternatively, “[1.3.b DBE_Model.doc](#)” presents examples of three types of existing networks, giving some hints to guide thinking on which of these are present in your region, and some tips concerning DBE deployment.

Once the sector selection is made, it is important to ascertain the DBE ‘readiness’ of the sector(s) chosen. The various spreadsheets of “[1.3.c Readiness.xls](#)” help in assessing the readiness of the sector(s) selected and offer a “methodology” to better understand sector needs and attitude towards DBE – they are not intended to collect quantitative data. Regional readiness is analysed through 5 sections: sector condition, IT SMEs sector, technological framework, legal framework and financial framework. The tool also helps to define which activities should be developed within the DBE implementation plan (i.e.: how important it would be to promote the collaborative attitude? For example, it may be necessary organise training workshop for developers? etc.)

Note: *In the DBE Integrated project a methodology and a set of tools have been created in order to allow Regional Catalysts to better understand their regional context and to define a regional action plan for DBE promotion and implementation. These tools are: Balanced Scorecard; Interviews and Grounded Methods (Regional Maturity Grade); Social Network Analysis; Focus Groups and Online ‘Mind Maps’. Details of these tools can be found at: (http://www.digital-ecosystem.org/DBE_Main/Members/aenglishx/regionalfocus/regionalanalysis).*

1.4 The ‘business case’ for planning a DBE deployment

The document “[1.4.a Overview.doc](#)”, summarises the key issues faced by previous DBE pilot projects and can help you consider the practical issues of a DBE regional deployment.

The attached document ([1.4.b CB_Approx.xls](#)) helps to estimate the costs and benefits arising from DBE implementation. The benefits are derived from data collected through the DBE SWOT analysis and regional benefit analysis. The costs analysis is derived from a framework developed by the DBE Integrated Project (available at page 83 of the [DBE Book](#)).

CHAPTER 2

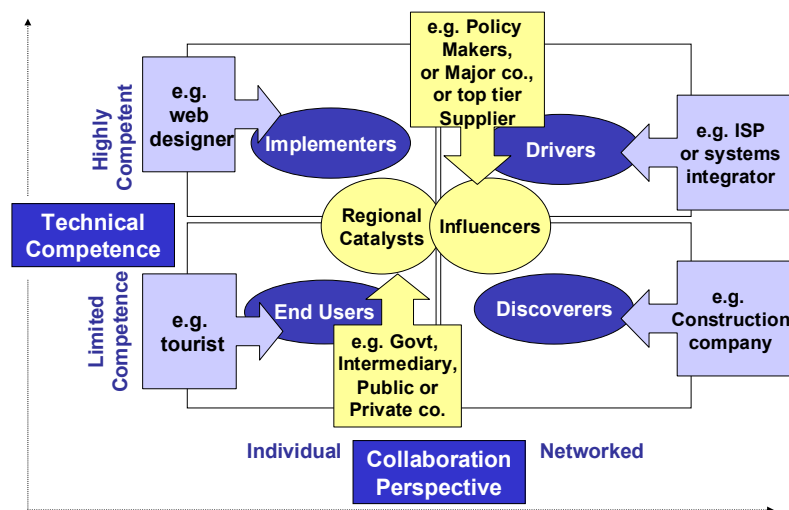
Awareness Raising & Commitment of Key Players

This chapter covers the key steps and elements involved in engaging the various stakeholders and players required in the implementation of the DBE. There are several key roles that need to be fulfilled which will require a range of different regional players being involved. This chapter sets out the key roles and suggests the types of organisations or players that typically could undertake the roles.

The potential benefits for each stakeholder type are presented along with some ideas on how to engage with the various players and to support their involvement in the DBE.

2.1 Introduce the Relevant Stakeholders

There are a number of different roles or user scenarios involved in the implementation of a DBE. The following diagram illustrates these:



In planning a DBE deployment, it is important to clarify the roles undertaken. Taking each of these roles in turn, their function can be described as follows:

Influencer: The Influencer generally provides the impetus for developing a DBE. The influencer might instigate a change or impose a condition giving rise to a particular requirement by the discoverer which would lead to the need for a solution that can be addressed by DBE.

In line with the example of a construction company - which is further discussed below - the role of influencer could be undertaken by a major property developer client or possibly an industry regulation body.

Discoverer: This is typically the organisation that recognises the opportunity of DBE to address a particular need.

The example of a construction company, which works with a significant number of partners and/or subcontractors can help to identify DBE as a potential tool to: facilitate collaborative

working and find those services needed by the construction company, offered by partners and subcontractors, that the company works with.

Driver: This is the organisation that, having identified the particular need and DBE as a potential solution, would operationally drive the development and implementation of the DBE and ensure its continued development and evolution.

In the construction company example the driver could be the procurement unit/team.

Regional Catalyst: This role is primarily a motivational and engagement one to ensure that the relevant end users, potential implementers and other relevant players are fully engaged in and have a good understanding of the benefits of participation in the DBE. The regional catalyst would also arrange for any training or skills development required for any of the local players to undertake their role within the DBE.

In the context of the construction company example, this could be the services department of the construction company.

Implementer: This role would be responsible for the design/development of the DBE technology platform and of the specific services for the DBE environment.

In the construction company example this could be the software or internet supplier or partner of the said company.

End User: This role encompasses those organisations who would use the services offered in the DBE.

In the construction company example, these could include existing/potential suppliers or partners who wish to respond to the requirements of the construction company.

Two key points to note here:

- **There may be more than one organisation that undertakes the given role** (depending on the scale and complexity of the DBE implemented).
- In some cases, the **same organisation may take on more than one of the roles**, for example, the discoverer and driver roles could be performed by the same organisation.

The tool "[2.1.a Actors_Contacts.xls](#)" provides a template that can be used to document and define the specific organisations that could undertake the various roles.

2.2 Awareness Raising

There are a number of key target audiences that will need to be engaged with and stimulated to participate in the DBE, for which "[2.2.a Audiences.doc](#)" provides a check-list. For further guidance on engaging with various target audiences please refer to Deliverable D2.6 "*Guidelines for identifying, approaching and communicating with key target audiences*" (available for download at: http://www.peardrop.eu/library/DBE_Library/Pages/peardrop_deliverables.aspx)

The slides of "[2.2.b Main-Points.ppt](#)" set out the main messages in terms of the benefits, opportunities and challenges of DBE for each target audience group.

A variety of tools and techniques can be employed to support the awareness raising campaign. These include the use of:

- workshops, seminars and focus groups;
- posters, leaflets and mail shots;
- the regional media (TV, radio and press);
- videos;
- conferences and exhibitions;
- publications of DBE developments, newsletters and reports;
- socialising with journalists.

Small group events entailing face-to-face interaction have the benefit that they encourage feedback and are more likely to stimulate interest, enthusiasm, and commitment.

It is suggested that a Marketing, Information and Communications Plan covering all aspects of the DBE initiative is created, including awareness raising, using external experts if necessary. Cascading information about the DBE initiative (by training a network of people to spread the message) can be a cost-effective means of reaching a wider audience. But care needs to be taken to ensure that a *consistent* 'message' is conveyed.

Many regions have found it helpful to carry out the baseline inventory process simultaneously with the start of their awareness raising programme as a means of identifying the activists and expertise, reinforcing the message, and winning support.

2.3 Identification of a Champion

The company or region who is seeking to implement a DBE will need to identify a champion that can provide the necessary leadership and authority to see the DBE implementation through. This organisation, through its nominated representative, will be responsible for taking the region through the process of defining, elaborating and implementing their DBE. The attached document ([2.3.a Champion.doc](#)) sets out what the role of the DBE champion should be.

2.4 Definition of Roles & Responsibilities

An outline role profile has been developed for each of the key roles in the DBE implementation, intended to provide guidance to the responsibilities and activities that need to be assigned to ensure a successful DBE implementation:

- [2.4.a Influencer_Role.doc](#)
- [2.4.b Discoverer_Role.doc](#)
- [2.4.c Driver_Role.doc](#)
- [2.4 d Regional_Catalyst_Role.doc](#)
- [2.4.e Implementer_Role.doc](#)

A role profile is not provided for the end user as this role is self-explanatory.

It is important to note, once again, that there may be more than one organisation undertaking each of the roles described. Equally one organisation may play more than one role in the implementation of the DBE.

Each of the individual roles will be engaged at different stages of the DBE implementation. The slides of "[2.4.f Relations.ppt](#)" illustrate where each of the roles are involved and inter-related throughout the process.

2.5 Identification of companies to be involved

Ideally, the DBE implementation in the region will involve local SMEs in the design and build phases and the later operation phase of the DBE. In order to map the skills and readiness of the local ICT SMEs a short questionnaire is included ([2.5.a SME.xls](#)). This is intended to supplement the regional picture established in the assessment of the regional readiness in chapter 1. The questionnaire would be issued to all identified ICT companies in the local area.

2.6 Concrete Actions in Support of SME Adoption

Depending on the level of expertise found within the region, it may be necessary to provide some up-skilling and training for local SMEs to accentuate their skills base for the DBE implementation, as outlined in document "[2.6.a SME_Support.doc](#)".

CHAPTER 3

DBE Legal & Governance Issues

In this chapter, we cover the key legal and governance issues related to the deployment of a DBE. There should be a clear identification and analysis of local governance principles prior to the implementation of a DBE so that this implementation can be carried out with the best possible use of, and be favoured by, the applicable governing framework.

This analysis should reveal the legal tools available for the deployment procedure.

3.1 Description of local governance principles

The Region at the heart of the decision-making process

European regions have different scope of competences and different degrees of autonomy. In most cases, the main decision-making body is either the Regional Government or the Regional Assembly. However, the action strategy is always defined by the Regional Government or Regional Assembly, wherever regional development is concerned.

The freedom of action depends not only on the Region's autonomy but also on the role of the State acting as a coordinator and initiator (In France, the State establishes poles of competitiveness and launches national calls for projects). In Spain, the Aragón DBE pilot example shows that there is State intervention in the action of local authorities, through bidirectional periodic meetings. General guidelines are provided top-down with bottom-up information. Moreover, the different regional governments (the IST departments in a horizontal way) have periodic meetings to share their experiences.

Aquitaine: a successful example of local governance in the field of ICT

Launched on the 21st January 2004, the Aquitaine Pole for Information Society (*in french 'Pôle Aquitain pour la Société de l'information –PASI'*) is the first competence pole on ICTs created in France following the decisions of the CIADT ("*Comité interministériel de l'aménagement et du développement du territoire*") on the 13th December 2002.

Jointly hosted by the State and the Region and operationally organised by Aquitaine Europe Communication, this unincorporated body brings together the General Treasury ('*Trésorerie Générale*'), the Office of the Rector ('*Rectorat*'), the Prefectures ('*Préfectures*'), the Official Receiver ('*Caisse des dépôts*'), counties ('*Départements*'), agglomerations, and universities. Associates to the PASI today are: Regional consular bodies ('*Chambres Consulaires régionales*'), the association of electronic, informatics and multimedia professionals ('*association des professionnels de l'électronique, de l'informatique et du multimedia – ADEISO*'), the South Aquitaine E-Business Pole ('*Pôle e-Business Sud Aquitain – PEBA*') and the Enterprise and Advanced Communications Centre ('*Centre entreprise et communication avancée – CECA*')

The aim of the PASI is to structure a consultation framework to elaborate decision-making support tools. The PASI is a place of expression of needs, visions and actions of its members.

DBEs and the competence for economic development

In France, economic development is mainly the concern of the region. Different legal sources have conferred the competence of action in favour of economic development to regions (regional authorities). This action has been completed by diverse texts and its methods specified by recommendations in view of a deployment compliant with European competition rules. On its territory, the region coordinates the actions in favour of the economic development of territorial communities/authorities and their groupings.

Amongst the economic actions of the region, the following two actions are the most important:

- The definition of the aid regimes for companies and the decision of their provision. However, municipalities (*'communes'*) can set up their own aid regimes subject to the approval of the Region.
- The elaboration of a scheme for regional economic development, following consultations with counties (*'départements'*), municipalities (*'communes'*) and their groupings, on an experimental basis and for five years, in order to coordinate economic development actions, promote a balanced economic development for the Region and develop the attractiveness of its territory.

On the same territory, it is possible to have two bodies with the same competences. In France, there is no control (*'tutelle'*) between bodies (principle of autonomy) but the law (hence, the State) has specified the leader in some cases, for example, regarding economic aids. However, the State can give its approval to one or more local authorities so that in turn, these local authorities can grant aids and establish their own aid regime.

Departments, communes and groups can also intervene but only complementarily with the aids and regional aid regimes, within the limits of authorized ceilings and under the condition of having signed an agreement with the Region. These authorities can only grant direct aids to companies supported by the Region in the chosen geographical zones.

DBE and Regional Funds management competency

Allotment of FEDER under the control of State Representatives: France has chosen the de-concentrated management mode of the FEDER funds, granting the management authority as well as the payment authority to Regional Prefects (State representative in the region). The law gives them (Prefects) the competency for managing national and European policies in matters of local planning and economic development.

The “global subvention” procedure allows local communities, to bear the delegated management of part of the programme of their region in their respective fields of competency. However, the management of the programme is carried out under the responsibility of the Regional Prefect, who keeps the functions of managing and payment authority.

Under the “global subvention” procedure, a governmental experimentation has conferred to the Alsace Region since 2003, the full competences of management and payment authority, and since, the Alsace Region directly controls the European funds and accounts for financial responsibility in front of the European Commission, in place and stead of the State.

In the Aquitaine region in particular, the PASI (Aquitaine Pole for Information Society/ *Pôle Aquitaine pour la Société de l'Information*) brings together major public actors involved in decision-making related to ICTs and this informal body defines the strategic actions for the FEDER funds. The gathering of the key actors around the PASI table allows for a greater coherence in ICT strategic actions of the Aquitaine region.

In the Spanish Aragón pilot, the main coordinator of the FEDER funds management related to ICTs is the Department of Economy of the Aragon Regional Government, who also decides on the allotment of FEDER funds.

“Lines of projects” are managed by different entities. Thus, the *Instituto Tecnológico de Aragón* manages at least two lines of projects, “Innovaragon” and “DOCUP.”

Regulation framework

The elaboration of Regional Operating Programmes requires a concerted approach bringing together all the socio-economic actors of the Region.

For the 2007-2013 periods, each region is assigned a FEDER “envelope” for strategic axes of intervention and by classes of actions proposed for each axis on the basis of a regional socio-economic analysis and a predetermined strategy.

For example, the Aquitaine Region has integrated in the Regional Operating Programme explicit provisions on the use of the DBE to boost the competitiveness of territories, which will allow DBE project implementers to find FEDER financing sources under certain conditions.

3.2 Concrete Actions for DBE Governance

This section presents the practical actions that the DBE Deployment Team needs to take. As all actions will be undertaken in the context of private companies; the DBE Deployment Team faces various challenges and has to adopt a progressive approach with enterprises:

Prove that DBE is essential for SMEs and the region

- The DBE Deployment Team should foresee a preliminary explanation session on **peardrop** and DBE for companies of the same potential “DBE cluster” field and for local public decision-makers. Bilateral meetings should include the presentation of examples of successful applications of technical solutions in SMEs in order to arouse interest.

Show that DBE establishment is feasible

After having secured the agreement of SMEs on functioning principles, it is important to:

- Synthesize their needs in the different fields and to offer them support, with the help of the **peardrop Initial Guides**.
- Formalise their needs, taking into account different factors such as the evolution of tools and the sharing of resources.

It is necessary to model the relations between actors so that, from the beginning, measures of evaluation can be established in agreement with the SMEs.

Formalize a public private project

The aim is to set up a project bringing together co-financing partners and to find complementary sources of financing to the operational programme (ROP). In order to do so, the planner should define the legal structure which will host the initiative and the resources needed to pull the project through.

3.3 Identification of Potential Legal Instruments for DBE Development

Public-Private collaboration

Public Private Partnerships (PPP) allow for the financing and setting up of the DBE implementation by private actors, while the implementation is meant to be delegated to the regional authority.

The scope and content of a formal PPP policy will vary from one region to another. It is conceivable that some local regions may adopt policies that do not promote “public private

partnerships” as an option for service delivery, but others may embrace the concept enthusiastically.

If a local region is considering service delivery through a PPP model, it should consider:

- The type of services/projects for which the PPP will be used;
- The shape of the partnership;
- The degree of risk it is prepared to accept as well as how it intends to manage it;
- Its policy on the involvement of stakeholders throughout the process in conformity with: legislation, transparency, accountability, and the types of partners that is eligible to become involved in public private partnerships.

Finally, regions should also take into consideration **accounting and financial reporting** that apply to “public private partnerships”. Loosely defined, PPPs range from leases, services and infrastructure financing contracts, to government partnerships (involving jointly controlled operations, assets or organizations). The nature of the arrangements will dictate the appropriate accounting treatment in the financial statements of the local region.

The public sector is expected to follow the “Accounting Recommendations” at the European level, although public sector accounting standards are still evolving in the area of public private partnerships.

Call for proposals/tenders

A public invitation by a region for example, addressed to clearly identified categories of applicant, to propose operations within the framework of a specific EU programme. For promotion of DBE, it aims at granting a direct assistance subsidy within the framework of existing rules defined before.

In Aquitaine, for example, the region has defined a programme called “*programme d’actions innovatrices*” which determines the objectives and scale of assistance in the form of grants for operations promoting innovative actions via a **call to projects**. The programme sets out the rules regarding who may apply, the types of operations and costs which may be financed, and the evaluation criteria (quality, technical properties, aesthetic and functional qualities, etc.)

The process is simple:

- The Region adopts a decision which indicates the creation of a regional programme of innovative actions under a specific EU programme (Example: FEDER);
- Calls for projects;
- Selection of projects under established criteria;
- Attribution of a subsidy;
- Evaluation of the project.

Labour Law

Members of the DBE have to look into local labour law principles with regard to possibilities of relocation, maintenance of seniority, pensions, wages, benefits and collective bargain rights. In general terms, employees:

- Should have the possibility to refuse substantial modifications of the work contract (as it applies in the case of the French law)
- Must be aware of the responsibility they have within the DBE, as they might have to account for their participation in DBE activities.

The [1977/187/CE](#) (modified by the 1998/50/CE) directive can apply to the case of externalisation of employees in the implementation of the DBE partnership, since it touches on the preservation of rights of employees in case of transfer of companies, establishment or parties.

Moreover, work contracts should provide for the transfer of Intellectual Property Rights over the works created by the employee to the employer, which is already the case in most EU countries.

DBEs are meant to bring together professionals of diverse branches, for some, specific professional or vocational laws will apply and will have to be considered, such as membership (obligatory membership to trade associations for some branches) and prohibition of advertising for some professional branches.

Results: Suggestions for amending the [terms of the initial work contract](#).

Authentication and authorisation issues

A controlled access to online resources is necessary for the secure consultation and exchange of information within the DBE. Security is a *sine qua non* condition for the implementation of DBEs; otherwise these projects will have no credibility for companies wishing to join.

A foolproof authentication process will allow authorised members only to enter DBE platforms, the level of authentication strength needs to be the highest possible as any loss of data will be irretrievable and will cause important collateral losses.

An efficient authorisation system will provide differentiated access to services; users may have access to more or less sensitive data, according to the importance of their function. IMS will be managed by either the organisations themselves or service providers, depending on the size of the DBE.

Results: Points to remember in a User Charter checklist presented in "[3.3 Technical legal documentation.doc](#)".

Data protection & security

In any DBE, data protection issues are bound to arise since personal data collected from company employees and clients such as names, addresses, occupation, etc. and might be exchanged within the DBE.

Different solutions can be suggested to deal with the complexity that surrounds the DBEs:

- Cross-frontier DBEs might have to refer to the European data protection directive (1995) if members companies cannot agree on the applicable law, the directive having been differently transposed in member States.
- The peculiarities of a DBE have to be analysed in relation to the relevant legal regime governing them. This analysis will help DBE implementers to deal with the contradiction or impact on the relevance of data protection law.
- There has to be a clear identification of actors involved in the DBE and their role and responsibilities as data collectors/processors and controllers. This measure aims at ensuring that data protection law principles are respected and that each member is aware of their respective roles and responsibilities.
- Sort out the different stages of data processing in DBE and draw a chart with the rules governing each step of the processes.

It might be a wise decision to have a person responsible for data protection for the DBE in general, which ensures that the necessary precautions have been taken in the implementation of the DBE and that the rights of data subjects are respected.

DESCRIPTION OF LEGAL POSSIBILITIES TO FORM A DBE AND SOLVE THE ABOVE MENTIONED ISSUES.

In most cases, DBE members are likely to choose the form of the association, to be able to compete and contract with third parties. An association appears to be more credible to

potential clients than a mere group of professionals. However, the association structure does bear a disadvantage in most jurisdictions which allow it only for not for profit purposes.

A group of companies coming together to form an association will choose to form an unincorporated association, which does not constitute a separate legal entity and requires no registration. The simplicity of the association structure is its biggest advantage, and it also offers the flexibility needed in the beginning of relationships between SMEs.

However, it is necessary to carry out some procedures, such as the registration of the association's name and eventually its domain name, logo, trademark, etc.

The choice of a flexible structure does not mean the absence of rules of conduct within the association. It is important to establish rules of conduct for DBE members within an agreement, which can be called **Consortium Agreement**. Aspects to be covered in the Consortium Agreement are:

- Objectives of the Consortium (inclusion in a regional development plan of the territory)
- Membership conditions (procedure, fees...)
- Frequency rate of meetings
- Constitution of a management committee (functions, membership, designation)
- Distribution of work amongst the Consortium members
- Funds management
- Confidentiality and IPR issues
- Dispute resolution (internal and external)
- Liability of members
- Applicable law and jurisdiction

For further details on this aspects, refer to the **peardrop** document library, namely to:

- "KEY ELEMENTS OF A CONSORTIUM AGREEMENT" available at: http://www.peardrop.eu/library/DBE_Library/DBE%20Library/ConsortiumAgreementElements.doc
- "DATA REGISTRATION: A LEGAL PERSPECTIVE", that contains examples of clauses to be included in contracts, available at: http://www.peardrop.eu/library/DBE_Library/DBE%20Library/legal.doc
- "STATUTES ESTABLISHING AN ASSOCIATION FOR A DIGITAL BUSINESS ECOSYSTEM (DBE)", a checklist for the basis of an association agreement (available at: http://www.peardrop.eu/library/DBE_Library/DBE%20Library/Statutes.doc)

The above-mentioned documents can be used as a starting point by SMEs and are not standard documents that can be used and applied as such without taking into consideration the characteristics of each case. They have to be adjusted to the specific characteristics of each DBE.

Please find in "[3.3 Technical legal documentation.doc](#)" a checklists that succinctly presents the points to be mentioned when preparing and drafting essential documents that accompany the development of a DBE

CHECK LIST OF QUESTIONS FOR STAKEHOLDERS

Objectives : To place SMEs in the context of creating a DBE and bring the DBE into the company's strategy

GENERAL ISSUES	Are you aware of the local economic development policies?
	Is the Region associated to your plans? Another public actor (e.g. chamber of commerce and industry)?
	Do you have any kind of regional catalyst for governance? A local agency for support?
	What is the scope of action of the collaboration? (determines the legal structure)
	What are the effects of common action on the market? (determines the legal structure and the aids)
	Has a leader been identified within the cluster? (how the leader can help the DBE)
ANTICIPATING CHANGES IN WORKING CONDITIONS: HUMAN RESSOURCES	Are your employees trained to digital work environments?
	Have you anticipated modifications of work conditions (work contracts, information of employees)?
	Have you considered the effects of intercultural teams on your existing structure?
FRAMING THE PROTECTION OF PRIOR KNOWLEDGE: INTELLECTUAL PROPERTY RIGHTS ISSUES	How will DBE creations be protected?
	Who will participate to the creation of new knowledge and what is the status of new knowledge (joint/derivative work)?
	Will it be exploited within the DBE or in an outer circle including third parties?
	Who will exploit DBE knowledge and in what aim?
CONFIDENTIALITY ISSUES	Has the DBE provided for confidentiality rules?
	Have sanctions been provided for in case of violation of confidentiality rules?
	Is confidential information transmitted to non – members? Which rules apply to such a case?
	Are sanctions applied if confidentiality rules are violated by third parties?
PRIVATE LIFE: WORKERS AND CUSTOMERS	Do DBE members share sensitive information?
	Have you designated a person responsible for personal data collection and processing?
	Have you registered all personal data files for your company and done a joint registration for DBE shared files?

CHAPTER 4

DBE Technology Platform

In this chapter a DBE technology platform is explained, its technical requirements (i.e. (network access, terminals, servers, software platform), the installation process as well as the creation of DBE applications.

4.1 DBE Applications & Services Requirements

What is a Digital Business Ecosystem platform?

In this chapter the word DBE (Digital Business Ecosystem) is mostly used to describe the DBE-technology that has been developed in the framework of EU funded projects. The reader should notice that the term DBE is also often used to describe a networking model where different companies work together through ICT.

The DBE technology platform, a Java based peer to peer (P2P) platform, has been designed specifically to enable businesses to create, integrate and operate with both real-world and software services for SMEs via a digital network. In particular, the DBE software is Open Source licensed and thus it is affordable for small companies as well as larger ones. More importantly, the P2P open nature and infrastructure, is a feature that offers equal status between participating companies preventing a company from dominating others.

The DBE platform has two main functionalities:

- *networking*: DBE provides a P2P network that can connect any stand-alone service deployed on the DBE with another;
- *service search*: DBE offers a semantic layer on top of the services deployed and it can offer “Real World Services” without requiring specific software service. It is a kind of electronic “yellow pages” that helps find the right services for any particular occasion.

What are the technical requirements of DBE?

Network Technology

A DBE platform requires a standard TCP/IP network. There are no other general rules restricting the network infrastructure for DBE applications. Indeed, any internet connection will work. In general:

- Data transfer technologies require that some firewalls ports are open;
- Technology works better if the network access is made without NAT (Network Address Transfer) which means that the computer should have an official/public IP address;
- The speed of the network can vary greatly but, basically, end user applications should be connected by minimum 256kbit/sec broadband network.

Terminals

Applications are typically executed by standard personal computers (PCs) over the DBE platform, which can run any of operating systems like Microsoft Windows and Linux. SMEs do not need to have any separate servers for DBE, although server infrastructures like Enterprise Resource Planning (ERP) systems and other company-specific management systems can be used as part of DBE network.

Currently, a few mobile telephone models and virtually all laptops and desktop PCs made within the last five years can run DBE. There are even some small embedded devices that can run DBE applications Execution Environment (ExE, also known as *Servent*).

In conclusion, Desktop PCs and laptops with internet connectivity are ideal for running DBE-applications. Normally SMEs don't need to purchase any new hardware for these applications.

FADA Server/Node

The DBE FADA (Federated Autonomous Directory Architecture) server/node is a critical part of DBE technology, since it is the DBE's "nervous system".

DBE FADA server is a *node* in a virtual network used to "advertise" the services offered in the network. When a customer uses services from a DBE network, he/she only needs to connect his/her application to a FADA node. The FADA node will then distribute the service descriptions to all others users and makes therefore the service globally available.

Technically, a FADA server is a simple computer that runs FADA software. The server must exist in a fast and reliable broadband network. Typically a FADA server should be located in a hosted computing environment of local internet service provider (ISP).

Software Platform

The DBE software tools are:

Name of software	Needed by developers	Needed by end users
Java 5.0 (JDK or JRE)	yes	yes
ServEnt (Swallow, P2P-component)	yes	yes/no (if included in software no need for separate installation)
Eclipse 3.2.x (Integrated Development Environment)	yes	no
GEF 3.2.x (Graphical Editing Framework)	yes	no
EMF 2.2.x	yes	no
JEM 1.2.x (Visual Editor)	yes	no
WST 1.5.x (Web Tools Platform)	yes	no

For users of Microsoft Windows platforms:

- Download the "all in one package" installation available in the DBEStudio (http://dbestudio.wiki.sourceforge.net/Install_All_In_One_Distribution) and then add the ServEnt-part if a P2P feature is needed.

For end users:

- Only Java is required, all the rest is for software developers who will define a personalised application for the end users.

You should notice that there are two different kinds of DBE applications:

- Service development with semantics (*servent* + *DBEStudio*)
- Plain old P2P Services (*servent* + *Eclipse*).

More information for:

- *Servent* only type of usage available at the following link: <http://opensoa.blogspot.com/2006/12/quick-service-prototyping.html>
- Full *servent* + *DBEStudio* type of usage available at the following link: <http://opensoa.blogspot.com/2006/11/dbestudio-tutorial-ver-022swallow-ver.html>

More information of DBE tools and DBE FADA are available from report "[4.1.a DBE_Application_Specification.doc](#)" and installing instructions are available from report "[4.1.b DBE_Introducion.doc](#)".

4.2 The DBE Technology Platform & Training Requirements

Following what has been explained previously, it emerges that the regional catalyst ([2.4 d Regional_Catalyst_Role.doc](#)) must arrange one separate server for DBE-application platform: the DBE FADA (Federated Autonomous Directory Architecture) server/node.

Since the cost of hosting a FADA server can vary significantly, an example of an invitation to tender for hosting a DBE FADA server is provided: "[4.2.a DBE_FADA_Inv2Tender.doc](#)". The cost of hosting this kind of (virtual) server is at maximum a few hundreds Euro per month (i.e. a company in USA offers this kind of hosting services for less than 20 dollars a month and the same applies to some European companies).

The reader should note that it is better to locate the DBE FADA server in areas where the network connection between the region and the server is fast (in this regard the USA might not be the best solution).

Training /Competence Requirements

For **end users** there are no specific competence requirements since users simply use the DBE software through the same user interface that they had before.

The **DBE Implementer** SMEs (the ones that are responsible for the design and development of the DBE specific services for the DBE environment) must have software development skills covering Java and some knowledge in distributed programming. As for the current Eclipse based integrated development environment (IDE) - DBEStudio, used to create DBE services - it is powerful and easy to learn. Moreover, DBE technology is nicely integrated into Eclipse.

Need to transfer information between companies. The data transfer libraries provided by the DBE Execution environment (ExE) are easily deployable for the developer working with the Eclipse. Technically speaking, a programmer only uses a few procedure calls to add DBE connectivity to the software i.e. (s)he just opens some Java classes and methods for transfer by the network. The development of DBE services can be extremely fast, if the application exists as a service. If the person has some prior experience with Java/Eclipse programming, basic use of DBE technology can be learned in a couple of days.

Need to develop a service with semantics. The developers must be knowledgeable of model driven architectural design. More detailed knowledge and skills listing can be found in the tool: "[4.2.b DBE_KnowledgeSkills.doc](#)".

4.3 Concrete Actions to Support Technological Implementation

The most concrete action is to plan how to undertake the DBE deployment. Technological parts of the plan are:

1. check the ICT infrastructure level and enhance it to adequate if needed
 - networks
 - terminals
2. put/set up one DBE FADA Server
 - physical machine and network connection OR hosted (virtual) server
 - software installation
3. arrange training for software specialists
 - distributed programming
 - Java courses if needed (J2EE programming, Eclipse)
 - DBE specific courses (modelling, DBE basis, code camps-

4. arrange DBE advertising seminars
5. arrange business incentives

Network technology

As mentioned earlier a DBE platform requires a standard TCP/IP network. The network can be wired or wireless, for example Wimax or 3G (“mobile phone network”) can be used. If the network is wired it can be based on copper lines but if fibre is available it suits very well. Costs of the network can vary considerably; there are some estimates of the costs in the attached file ([4.3.a Costs.xls](#)).

Terminals

It is anticipated that the standard personal computers (PCs) that are used to run DBE applications would already be in place in SMEs. If there is a need for new terminals the local policy makers should consider if the purchasing of these should be supported or not. See also the later section on business incentives.

DBE FADA Server set up

This is the only real DBE specific part that is needed. As described earlier this can be hosted in server hotels. More information is available in the attached documents: “[4.1.a DBE_Application_Specification.doc](#)”, “[4.1.b DBE_Introduction.doc](#)” and “[4.2.a DBE_FADA_Inv2Tender.doc](#)”. Costs estimates of can be found in “[4.3.a Costs.xls](#)”.

Training for software specialists

As described in section 4.2., **end users** should have no special knowledge. For the **developers** of DBE applications there are slightly more skills required over and above typical (polytechnic or university level) software specialists have. If the survey of the knowledge levels in the region shows that there are needs for training in basic level skills then an education and up-skilling program should be arranged. The list of skills required is presented in the attached document ([4.2.b DBE_KnowledgeSkills.doc](#)). Most of those skills are general, only the distributed programming, J2EE programming, Eclipse together with DBE modelling and “how to use DBE Java classes” element would be considered to be DBE specific. The potential cost of DBE specific courses can be found in the excel worksheet “Training costs” of the attached Excel file ([4.3.a Costs.xls](#)).

DBE advertising seminars

Because DBE, intended as a business model, is something new, it is necessary to increase awareness and understanding. The results of previous deployments have shown that information to SMEs should include concrete examples (where possible using existing examples, for example the lessons learned in Aragón/Zaragoza) of models on how the development of new applications are supported.

Business incentives

In all of the regions which participated in the earlier [DBE Integrated project](#) the direct monetary support has been about 50% of direct costs. For one software project this has meant a support of about 10,000 to 50,000 Euro. Many of the projects have been quite small, therefore a rough estimate for one software development is about 20,000 Euro.

If a promising industry area is identified there might be a need for 5 to 10 new applications. So the minimum amount of Euros used for incentives should be more than 100,000 Euro.

Cost of DBE deployment in a region

Examples of all the technical cost associated with a DBE deployment are presented in “[4.3.aCosts.xls](#)”.

The total costs may vary considerably depending on the general cost level in the region. Information on different funding options can be found in the attached Excel file “[4.3.b Sources.xls](#)” (please note that this is a multi sheet file).

CHAPTER 5

DBE Financial Planning

This chapter covers the basic rules and issues related to the financial framework of a Digital Business Ecosystem deployment.

5.1 Preparation of a Financial Plan

There are several ways to potentially fund the deployment of a Digital Business Ecosystem: grant finance, debt finance or equity investment. (as detailed in the **peardrop** Financial Guide for Digital Business Ecosystem: (http://www.peardrop.eu/about/activities/Project_Activities/Pages/Workpackage7.aspx)

In general, regions can **combine** different types of funding **sources** to achieve higher levels of investment, such as:

- **“Hard investment projects”** (e.g. investment in communication routes, building of scientific technological parks, business incubators, innovation centre, etc.) that can be financed from the European Regional Development Fund (ERDF).
- **“Soft investment projects”** (e.g. training, exchange of experiences, improvement of human sources, etc.) that can be financed from the European Social Fund (ESF), if the region comes under Objective 1 or 2.

A DBE deployment will probably comprise a range of individual projects, and for this reason it is advisable to break-up the deployment of DBE into **several individual projects** that could be financed from **different specific sources**.

Every financial plan consists of **costs** and **funds**.

There are several ways to **break-down costs**. The most common way of cost planning is to do it according to the **kind of costs** (tangible assets, personnel, office, travel, etc.), but costs can also be broken-down by:

- **type of activity** (set of activity, work package, e.g. initial phase, mapping scene, SW development etc.);
- **time period** (by years or quarters);
- **sub-projects** (partial projects).

Similarly, the **set of funds** will consist of several items. The most common break-down is by the **sources of funds** (who is giving the money, who is sponsoring). However, it is also possible to split the funds available:

- by **type** (grant, debt, equity);
- according to **time period**;
- by **subprojects**, corresponding to the related structure of costs.

The attached file ([5.1.a Budget.xls](#)) proposes a basic structure of costs and funds that each region can adapt according to its individual conditions and requirements.

5.2 Cost-Benefit Analysis

The Cost-Benefit Analysis (CBA) is a method for analysing **costs, benefits and implications of project provisions**. It is necessary to undertake a CBA before starting a project because the investors need to have relevant indicators for decision-making.

A CBA presents the most important features of the project, therefore it covers usually:

- an executive summary of main expected results
- the identification of beneficiaries
- a description of investment project
- a comparison between the status quo (current system) and the situation if project is realised (proposed system)
- a description of methodology used
- a Cost & Benefit cash flow analysis
- a calculation of crucial indicators
- a sensitivity analysis
- a comparative Cost & Benefit summary.

A CBA should conclude with a **recommendation for decision** on the project.

There are several ready-made software tools available for calculating of CBA indicators. The attached document ([5.2.a Cost-Benefit.doc](#)) proposes an example of a common CBA structure/template. Nevertheless, although CBAs follow a general methodology and rules, member states - as well as regions – have usually developed their own rules and recommended processes for CBA in their national languages.

5.3 Concrete Actions in Support of DBE Funding

This section presents the practical actions that the DBE deployment team should be planning to take in this field. Rather than a classical description, the author should clearly define the phases and the steps to take, with a clearly stated timeframe, costs and contacts. An activity timeline and Gantt Chart ("[6.Action_Timeline.mpp](#)" or "[6.Action_Timeline.xls](#)") should be filled in for the specific activity & relevant related costs.

In general terms, regions are recommended to prepare and provide several practical actions in support of DBE Funding. Namely:

- A) Mapping the scene, analysing the state-of-the art concerning DBE Deployment (this can be done also using the **peardrop** guides).
- B) Identification of SWOT of the region related to the Deployment of DBE.
- C) Proposal of a set of sub-conditions that the region will need to have in place before starting DBE Deployment.
- D) Identification of projects leading to sub-aims assigning them under existing funding programmes. Restructuring the set of projects if necessary according to the basic needs for DBE deployment.
- E) Planning of sub-projects (partial projects) leading to DBE.
- F) Planning a wider project "DBE Deployment" managing the set of all sub-projects and leading to the final aim of DBE deployment.
- G) Identification of all possible sources of funding. Selection of projects that are eligible for public grant funding, agreement of co-financing if required.
- H) Agreement with partners on other types of funding (loans, equity, private grants)
- I) Approval of the concept by the regional policy makers (government, regional authority).
- J) Preparing the project proposals for grant funding and their submission according the respective "Call for proposal" (with agreed co-financing)
- K) Preparing the proposal of other projects
- L) --- Evaluation phase ---
- M) Signing of contracts
- N) Execution of projects

CHAPTER 6

Deployment Planning Timetable (Action Timeline)

In this chapter, **peardrop** presents a summary timeline comprising all the steps to be considered when planning a DBE deployment.

For this reason, we provide you with the [6.Action_Timeline.mpp](#) (or [6.Action_Timeline.xls](#)) with a pre-filled Summary timeline & Gantt chart (you can use with a *run time* version MPP if needed).

ANNEX - DISSEMINATION TOOLS

A DBE videos

The following links give you access to some explanatory videos that have been developed in the framework of the DBE Integrated Project (FP6).

- [The General Introduction to DBE: A micro-economic introduction to the DBE and outlines the benefits of the DBE for SMEs](#) - for SME [8' flash movie, 3.8M]
- [The DBE's Technical Infrastructure: An Introduction to the Technical Environment of the DBE](#) - for developers [8' flash movie, 0.3M]
- [The DBE's Evolutionary Environment: An Introduction to the Evolutionary Environment of the DBE](#) - for scientists [8' flash movie, 1.5M]
- [A systemic introduction to the DBE: Outlines the benefits of the DBE for SMEs](#) - for decision makers [draft in development]
- Case study [Example of service integration in a vertical sector made using DBE infrastructure](#) : Example of Tourism in Aragón - Spanish only
- Video of Francesco Nachira "[Which are the principles for an ICT infrastructure for a "nervous system" supporting the Economic Ecosystem?](#)" [Italian only] March 15th-17th, 2007 Biella, Italy - [International Conference: Local Networks and Global Development: ideas for the digital districts.](#)

B PPTs on DBE & peardrop

The **peardrop** project is offering you some ready to use presentations (PPTs) on:

- the **peardrop** project, see "**Presentation of the peardrop project**" (PPT) at http://www.peardrop.eu/library/DBE_Library/Pages/Otherpeardropdocuments.aspx
- the Digital Business Ecosystem concept see "**DBE Concept – presentation**" (PDF), from Andrea Nicola, DE conference 2007 at: http://www.peardrop.eu/library/DBE_Library/Pages/OtherDBEdocuments.aspx

C DBE Thesaurus

The **peardrop** website provides you with the explanation of the key terms and words related to DBE. To access visit the relevant page:

http://www.peardrop.eu/library/DBE_Thesaurus/Pages/DBEThesaurus.aspx

D Case Studies of Technology Transfer and DE Adoption from the DBE Book

The [DBE Book](#) comprises a section dedicated to the experiences of regional catalysts in Aragón, West Midlands, India, Brazil and Ireland. Although the actions of those "regional catalysts" are not always related to the role of the regional government, such "DBE stories" can be of help when planning the deployment of DBE in your region. Therefore, do not hesitate to look at them! Link: <http://www.digital-ecosystems.org/book/Section4.pdf>

E peardrop Brochure

When promoting DBE and its deployment, it could be useful to show that such activity has also been undertaken in the framework of a European funded project. Therefore, feel free to print and use the **peardrop** brochure!

http://www.peardrop.eu/library/DBE_Library/DBE%20Library/PEARDROP%20Brochure%20FINAL.pdf

F peardrop Bulletins

In the framework of the **peardrop** project, in order to present the experience of the two DBE Pilots, two short interviews to Mr. Javier Val (ITA - Aragón Region) and Mr. Rod Shelton (UCE, West Midlands) have been produced.

To access them refer to the following link:

http://www.peardrop.eu/library/DBE_Library/Pages/Otherpeardropdocuments.aspx

G peardrop Initial Guides

peardrop proposes some “Initial DBE Guides” introducing the DBE concept and its benefits. Such Guides are meant to be short and of easy use. To know more about each of the project’s five DBE domains, readers are invited to refer to the “State of the Art Reports” provided in support of the Toolkits. These reports provide the readers with more detailed explanations and references for each of the domains analysed by the project.

Guides Overview				
DBE as a model for Local Development	Legal Guide for DBE deployment in regions	DBE Technology Infrastructure & Support Systems	SME/Company Perspective of DBE	Financial Guide for DBE deployment in regions
<ul style="list-style-type: none"> DBE Economic advantages; DBE effects on local development Regional key players and their roles in DBE implementation Role of regional policies 	<ul style="list-style-type: none"> DBE Legal definition Legal Actions during lifespan of a DBE DBE Legal structure DBE, Human Resources & Skills DBE & Open Source Software (OSS) DBE, Competition & Security 	<ul style="list-style-type: none"> Explanation of the Ecosystem Infrastructure DBE technical requirements DBE Implementation DBE Roadmap DBE Infrastructure Support 	<ul style="list-style-type: none"> SMEs & Ecosystem model SMEs role in DBE DBE benefits for the SME The opportunities, challenges, risks of and preconditions for DBE 	<ul style="list-style-type: none"> DBE & Regional Development Strategies Modes of funding & sources of funds at EU level Roadmap for financing DBE Financial engineering

To access the Initial DBE guides, provided in 8 different languages, visit the following page:

http://www.peardrop.eu/library/DBE_Library/Pages/peardrop_deliverables.aspx

To access the Initial Report on the State of the Art of the mentioned domains, visit:

http://www.peardrop.eu/library/DBE_Library/Pages/Otherpeardropdocuments.aspx

H Guidelines for Approaching DBE Target Audiences

peardrop suggests that any region or organisation looking at the possible deployment of a regional Digital Business Ecosystem (DBE) should target and involve different actors – specifically:

- Regional public authorities and policy makers;
- Regional catalyst organisations and programme managers working on ICT adoption;
- Software developer and provider SMEs
- Open Source developer and business communities
- Leading ICT companies.

More details on this issue available in the “*Guidelines for identifying, approaching and communicating with key target audience*”:

http://www.peardrop.eu/library/DBE_Library/DBE%20Library/D2.6.Guidelines.for.Target.Audience.FINAL.online.pdf

I Regional Case Studies

The approaches to DBE of the 13 **peardrop** associated regions have been recorded in the form of short and easy to read “Case Study Reports” (each of which is no longer that 6 pages). All reports are available at:

http://www.peardrop.eu/library/DBE_Library/Pages/peardrop_deliverables.aspx

L Workflow Diagram